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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,539	03/01/2002	Henner W. Meinhold	10001.001500 (NVLS 696)	2254
31894	7590	11/03/2003	EXAMINER	
OKAMOTO & BENEDICTO, LLP			VO, ANH T N	
P.O. BOX 641330			ART UNIT	
SAN JOSE, CA 95164			PAPER NUMBER	

2861

DATE MAILED: 11/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

RF

Office Action SummaryApplication No.
10/087,539Applicant(s)
MEINHOLD ET AL.Examiner
Anh T. N. VoArt Unit
2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Preamendment filed on 9/29/2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 9-16, and 18-26 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-16, and 18-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: |

Art Unit: 2861

NON-FINAL REJECTION

Response to Applicant's Amendment

The rejections over Car Michael et al. (US Pat. 3,852,768) and Sarmast (US 2003/0011663A1) are withdrawn in view of the amendments to the claims.

Claims Rejections

Claim Rejections - 35 U.S.C. § 112

Claims 1-7, 9-16 and 18-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Clarification or correction is required.

In claim 1, it is not understood what the "equipment" is and how it functions.

In claim 13, it is unclear what the "equipment" is and how the droplet can be dispensed on the equipment and how this limitation is read on the preferred embodiment. Insofar as understood, no such equipment is seen on the drawings. The same is true for claims 21 and 24.

In claim 16, it is unclear how the head can be "calibrated" since it is not clearly defined. The recitation "material" is confusing because it is unclear if this is additional "material" or a further recitation of the previously claimed "droplet" on line 3.

In claim 21, the recitation "the mechanisms" on line 10 lacks antecedent basis. It is unclear how the equipment can use the mechanism to perform the deposition on a wafer and where the wafer comes from.

Art Unit: 2861

The remaining claims are dependent from the above claims and therefore also considered indefinite.

Claim Rejections - 35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person will be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-14 remain rejected under 35 U.S.C. 102 (b) as being anticipated by Pillion et al. (US 6,617,079).

Pillion et al discloses in Figures 1-5 a system comprising:

- means for delivering a droplet (10) in an integrated circuit manufacturing equipment (wafer, column 1, lines 47-50);
- means (16, 18, 24, 26) for detecting the droplet (32); and
- means for generating a signal (20) indicating a characteristic (shape or mass) of the droplet (32).

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior arts are

Art Unit: 2861

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 15 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Pillion et al (US 6,617,079) in view of Carmichael et al (US 3,852,768).

Pillion et al discloses in Figures 1-5 a system comprising all of the limitations of the claimed invention as discussed above but does not disclose that the sensor is used to detect the velocity of the droplet.

Nevertheless, Carmichael et al teaches in Figure 1 a sensor (3) for detecting the velocity of the droplets (1), see column 3, lines 5-10.

It would have been obvious to a person having skill in the art at the time the invention was made to employ the sensor taught by Carmichael et al in the system of Pillion et al for the purpose of detecting the velocity of the droplets.

Claims 1-7, 9-16 and 18-26 are rejected under 35 U.S.C. 103 (a) as being anticipated by Nishimura (US 5,705,935) in view of Osborne (US 4,922,268) and further in view of Carmichael et al (US 3,852,768).

Nishimura discloses in Figures 3-6 a system comprising:

- a printhead (12f) inherently having nozzles for deposit ink drops (not shown) on wafer (10) in a

Art Unit: 2861

manufacturing equipment (11).

However, Nishimura does not disclose a sensor comprising two parallel plates coupled to an amplifier as recited, i.e., in claim 1 and a sense amplifier for detecting the characteristics of the droplet that calibrates the nozzle as recited in claim 7, and the sensor being located near the wafer as recited in claim 11.

Nevertheless, Carmichael et al teaches in Figure 1 a printing device comprising a sensor circuit (3) having two parallel plates (3a, 3b), a sense amplifier (10) and an amplifier (11) for detecting the characteristic (velocity) of the drops but does not disclose that the detection signal is used to calibrate the nozzle of the printhead.

Osborne discloses in Figures 4-5 an ink jet printer comprising:

- a sensor module (24) for detecting the ink drops (Figure 4) to calibrate the nozzle arrays that would compensate the drop fire timing, column 2, lines 10-18.

It would have been obvious to a person having skill in the art at the time the invention was made to employ the sensing circuit taught by Carmichael et al and the teaching of using the detection signal to calibrate the nozzle taught by Osborne in the system of Nishimura for the purpose of detecting the ink drop characteristic and calibrating the nozzle of the printhead so that the drop fire timing would be compensated. Note that employing the sensor for sensing the drop mass is well known in the art depending upon a particular application. See the mass sensor being used in Pillion et al (US 6,617,079) as discussed above. Also, It would have been obvious to a

Art Unit: 2861

person having skill in the art to place the sensor circuit close to the wafer of Nishimura for accurately detecting the characteristic of the ink drops.

Response to Applicant's Arguments

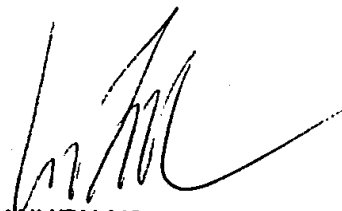
The applicant argues that Carmichael, Sarmast and Osborne are not concerned with integrated circuit fabrication. The argument is not persuasive because this limitation is disclosed in the Nishimura reference as discussed above.

CONCLUSION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (703) 305-8194. The examiner can normally be reached on Tuesday to Friday from 8:00 A.M. to 5:00 P.M..

The fax number of this Group 2861 is (703) 305-3431 or 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.



ANH T.N. VO
PRIMARY EXAMINER

October 25, 2003